



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,314	11/29/2000	Masaharu Amano	001337	8583

23850 7590 03/07/2003

ARMSTRONG, WESTERMAN & HATTORI, LLP  
1725 K STREET, NW  
SUITE 1000  
WASHINGTON, DC 20006

EXAMINER

MAMMEN, NATHAN SCOTT

ART UNIT PAPER NUMBER

3671

DATE MAILED: 03/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/725,314

Applicant(s)

AMANO ET AL.

Examin r

Nathan S Mammen

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 7-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amended claim 1 now recites the following limitation: "said axial force fluctuation absorption means being in addition to inherent elastic properties found in the material from which said bucket tooth is fabricated." When read according to its plain meaning, this limitation is not disclosed in the specification and is, in fact, contrary to the disclosure. Applicant discloses several embodiments of an axial force fluctuation absorption means for a bucket tooth, including warping the bucket tooth (specification – pages 12-17), spot-facing the bolt hole (specification – pages 17-22), tapering the bolt-hole bearing surface (specification – pages 22-27), forming the bolt-hole bearing surface with a spherical curved face (specification – pages 27-29). However, all these embodiments involve one common idea: they maximize the application of the inherent elastic properties of the material. In instant claim 1, Applicant is not claiming his invention, which is shaping the bucket tooth to better absorb axial force fluctuations. Instead, Applicant's amendment to claim 1 now suggests that the bucket tooth includes another axial force fluctuation means, such as an imbedded spring or some other structure. Applicant's specification and

Art Unit: 3671

previous responses to office actions state otherwise. In a response dated June 24, 2002, Applicant stated that “[t]he applicant’s present invention is distinguishable...because in the present invention the bucket tooth itself provides the axial force fluctuation absorbing means without an additional component...” (page 4). Contrary to the amended claim 1, Applicant’s invention depends on the elastic properties of the material from which the bucket tooth is fabricated: Applicant’s invention is maximizing the use of those properties. The instant claim 1 does not claim Applicant’s disclosed invention.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Maurer et al. (U.S. Patent 4,360,982), cited in previous office action.

The Maurer ‘982 patent discloses a bucket tooth (60) attached to a bucket lip (36) via a fastening bolt (65). The bucket tooth has a concave aperture (80) for receiving the fastening bolt. The bucket tooth is made of a boron steel (col. 4, lines 33-48). The combination of the concave aperture and the steel construction absorbs axial force fluctuations, due to the inherent properties of steel. For example, it is notoriously well known that steel, and other metals, deform first elastically and then plastically in response to a force. When the bolt acts upon the bucket tooth, the bucket tooth, particularly at the concave aperture, also deforms elastically. This elastic deformation absorbs the axial force. Deformation in the elastic region also inherently means that

Art Unit: 3671

the bucket tooth generates a resilient return force. Warpage and the resulting direction of concavity only depends on the direction the force is being applied.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer et al. (U.S. Patent 4,360,982).

The Maurer '982 patent discloses the claimed invention, as stated in paragraph 5 above, except for the amount of warp. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a warp of between 2 mm/m to 15 mm/m, since the warp is dependent upon the force applied.

7. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer et al. (U.S. Patent 4,360,982) in view of Rose et al. (U.S. Patent 4,958,970), both cited in previous office action.

The Maurer '982 patent discloses the claimed invention, as stated in paragraph 5 above, except for the bucket tooth being spot faced on the side facing the bucket lip. The Rose '970 patent teaches that it was known in the art at the time the invention was made to spot face (Fig. 8 – countersink) an element on the side facing the surface to which it is to be bolted. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide

Art Unit: 3671

the bucket tooth of the Maurer '982 patent with the spot facing of the Rose '970 patent, in order to provide an improved connection and force absorption means.

Regarding claim 6: The range of the ratio of depth of the spot facing to the diameter would have been an obvious matter of design choice since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### ***Response to Arguments***

8. Applicant's arguments filed 12/27/02 have been fully considered but they are not persuasive.

As stated in paragraph 2 above, Applicant's amendment constitutes limitations not disclosed in the disclosure. Accordingly, those limitations are not considered and the prior rejection still applies.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Mammen whose telephone number is (703) 306-5959. The examiner can normally be reached Monday through Thursday from 6:30 a.m. to 5:00 p.m.

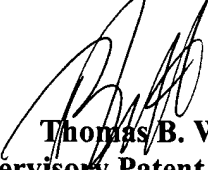
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached at (703) 308-3870. The fax number for this Group is (703) 305-3579.

Application/Control Number: 09/725,314

Page 6

Art Unit: 3671

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-1113.



**Thomas B. Will**  
**Supervisory Patent Examiner**  
**Group 3600**

**NSM**  
**3/04/03**

**Nathan S. Mammen**